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93-7

VIA FEDERAL EXPRESS

Office of the Secretary
Federal Communications Commission
1919 M. Street, N.W.
Washington, D.C. 20554

Re: Implementation of Section 17 of the Cable Television Consumer Protection and Competition Act of 1992; Compatibility Between Cable Systems and Consumer Electronics Equipment

Dear Mr. Secretary:

Pursuant to the Notice of Inquiry issued January 14, 1993, 58 Fed. Reg. 7205, enclosed please find an original and nine copies of the Comments of Zenith Electronics Corporation on the above-captioned matter.

Sincerely,

Stephen K. Weber

SKW/bjp
encl.

Before the

FEDERAL COMMUNICATIONS COMMISSION

Washington, DC 20554

In the Matter of

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| Implementation of Section 17 of the Cable Television Consumer Protection and Competition Act of 1992 | ) | ET Docket No. 93-7 |
| Compatibility Between Cable Systems and Consumer Electronics Equipment | ) | |

## COMMENTS OF ZENITH ELECTRONICS CORPORATION

Zenith Electronics Corporation hereby responds to the Notice of Inquiry of January 14, 1993, in which the Commission has requested information concerning ways to improve compatibility between consumer electronics equipment and cable systems, as required by the Cable Television Consumer Protection and Competition Act of 1992.

Zenith has participated at both management and engineering levels in numerous deliberations on the subject of this Notice sponsored separately or jointly by the Electronics Industries Association

Consumer Electronics Group, the National Cable Television Association, and the Cable-Consumer Electronics Compatibility Advisory Group.

However, as a manufacturer of both color television and cable TV equipment, as well as a marketer with engineering involvement of video cassette recorders under our own brand name and a proponent with AT&T before the Commission of a High Definition Television system, Zenith has a unique view of various forces and trends at work in the industries and markets affected by these proceedings. Accordingly, we believe it may be useful to the Commission for us to submit separate Comments.

In particular, we believe we can propose potential compromise solutions to compatibility problems which will serve the consumer interests identified in the Act while allowing technologies in the relevant industries to continue flourishing. At the same time, we believe these potential solutions can greatly simplify the Commission's task in this enormously complex matter. Thus, this Comment, rather than addressing the questions raised in the Notice on an item-by-item basis, will be focused on these potential solutions.

## THE TASK CREATED BY THE ACT

The Cable Act of 1992 identified certain apparently competing interests and asks the Commission to resolve them: the interest of

the consumer of television and VCR equipment, some functions of which may be compromised by a decoder/converter "box" used by many cable systems; and the interest of cable companies in controlling access to cable signals, which often requires use of that same converter/decoder box.

There are strong imperatives in force, including in particular certain provisions of the Cable Act itself (anti-buy-through, regulated basic service, must-carry and retransmission consent), which are pushing cable companies toward renewed reliance on set-top boxes as the means for insuring signal security. The advent of digital signal transmissions in both broadcasting and cable environments and the development of other forms of delivery, such as DBS as an expanded competing service and telephone network delivery, further complicate the picture. Those systems will most likely require boxes in the home to receive and decode signals, as well as maintain signal security.

As might be expected, the consumer electronics manufacturing industry and the cable television manufacturing industry have each leaned toward solutions which place the major burden of compatibility performance on the other. Thus, despite substantial efforts by many in both industries, a joint solution has been difficult.

## SOLUTIONS PREFERRED BY THE CONSUMER ELECTRONICS INDUSTRY

Solutions such as Interdiction and Broadband Descrambling would result in unscrambled, broadband signals being delivered to the consumer's home entertainment equipment, and thus would permit full utility of all the functions and features of that equipment. In this environment, the consumer electronics industry could continue to make and sell to cable subscribers the highly-featured products that many consumers demand.

The cable industry cites high cost, limited security and current non-availability of broadband descrambling technology in a commercial context as substantial shortcomings of these approaches. Interdiction schemes add the cost of hardware even for subscribers not buying

## SOLUTIONS PREFERRED BY THE CABLE INDUSTRY

The cable industry has proposed that TVs and VCRs be made more truly "cable-ready," that is, having more resistance to interference and an "interface" such as the ANSI Standard 563 "Multiport." While there now appears to be general agreement that the "Multiport" as presently defined will not be adequate for a number of reasons, an updated interface could be readily developed. Video products so designed and built could offer the user full enjoyment of all features, while cable signal access and security would be handled through a "set-back" box — that is a small device attached to the rear of the TV cabinet — rather than "set-top" box.

by the absence of profitability in the U.S. market. Finally, this approach does not improve the fortunes of the owners of color TVs and VCRs already in service who experience the problems which gave rise to this legislation.

## A COMPROMISE SOLUTION

Zenith proposes the following as necessary elements of a long-term solution to be promulgated by the Commission. We believe this proposal will effectuate the fundamental purposes of the Act in improving compatibility while also serving the Congressional directive to give careful consideration to the costs and benefits to consumers and the control and security needs of cable operators. Under this proposal, the Commission would:

1. Establish a new "cable-ready" specification for TVs and VCRs, incorporating an IF (Intermediate-Frequency) interface port with related performance improvements and a microprocessor communication link between the set-back box and the consumer equipment.

2. Require consumer electronics manufacturers to design to this "cable-ready" criteria at least one remote control model in each color TV screen size they market for the screen sizes 25-inch and over. These larger sets are most likely to be the primary

viewing set, are most likely to be connected to cable, and are most likely to have the advanced features which gave rise to the pertinent provisions of the Act. Manufacturers should be permitted to offer VCRs and additional TV models of this design at their option, as the marketplace may demand.

3. Require that cable operators make the appropriate interface decoders available to buyers of these "cable-ready" products, and offer those subscribers a reduction in their monthly rate.

This proposal would, we believe, provide an effective solution for the consumer with the most equitable impact on manufacturers and signal delivery providers. "Cable-ready" products of this nature would: allow for full functionality of the remote control and advanced TV and VCR features; eliminate the consumer annoyance with set-top boxes; provide a clear standard to which TV and VCR manufacturers could design future products; accommodate all currently-used scrambling technologies, and thus allow cable companies a continued high level of scrambling flexibility; and provide a means for accommodating future digital technologies without compromising the consumer features of electronic equipment.

It would, to be sure, impose a significant cost burden on consumer electronics manufacturers, and it will be essential that they be able to recover those costs by raising prices. As a necessary part of this

proposal, therefore, we are urging the Commission not only to assure that the cost burden is kept to the minimum necessary, but also to impose certain obligations on the cable industry to share in these burdens. This will be discussed in detail further below.

Concern has been expressed that, as a long-term initiative, an interface-port solution such as this fails to address the current problems with the millions of TVs, VCRs and cable boxes already in use. There are technically feasible enhancements to set-top cable converters which would improve, although not make perfect, the compatibility of cable with the "installed base" of TVs and VCRs. For example, an active splitter and automatic A-B switch built into the set-top terminal can permit pass-through of all channels when the

represents a system architecture capable of handling the compressed digital signals soon to be delivered by cable program providers and cable systems.

## CONSIDERATIONS FOR "CABLE-READY" CONSUMER ELECTRONICS PRODUCTS

### A. Technical Changes

The following are technical changes which would be required in television sets designed to a new "cable ready" standard:

1. IF Interface. An IF interface, which would include an IF tap, IF or baseband return, and a microprocessor communication link (or "bus"), will permit tuning control by the consumer electronics equipment and retention of full functionality of special

3. Tuner Improvements. To handle future advances in cable service, such as digital compression, tuner improvements such as double-conversion (for flat frequency response) with low phase-noise oscillators will be needed. As cable tuning bandwidth is expected to grow in the future, we recommend a frequency cap at 1 GHz as a practical limit.

B. Costs and Prices

Our preliminary estimate of the variable cost premium for a television incorporating the changes above is $14 per unit. If the

would therefore strongly oppose any initiative to impose this design specification "across-the-board." Annual industry TV sales exceed 23 million units and VCR sales top 12 million. Assuming the consumer electronics industry could pass-through and mark-up its costs, blanket application would impose a $1 billion price tag on the public. It would affect millions of consumers who would have no need for the enhancements. If the consumer electronics industry were unable to pass even its costs along, the already dismal financial condition of the industry would only be further weakened.

It is possible that the cable-subscribing consumer would find "cable-ready" products to be worth the higher price if they are optional, allowing the with-and-without versions to be seen side-by-side in the stores. However, prior history with industry pricing of other television improvements, including the recent example of closed captions, leads us to believe that the value-added story will have to be reinforced by an offer of lower cable rates being made available to purchasers of such products.

## CONSIDERATIONS FOR CABLE HARDWARE AND OPERATIONS

### A. Interface Decoders

The IF decoder unit which would interface with the port on the "cable-ready" consumer electronics product (and which would be supplied to subscribers by cable companies under this proposed solution) would not include a tuner, display, keyboard or remote control circuitry, as a conventional set-top cable box does today. Such "set-back" decoders could be priced to the cable operator as much as $40 less than the $100-$120 per unit invested today on a typical 550 MHz system.

### B. Rates

The cable operator would have the following financial justifications for reducing the monthly rate charged the owner of new "cable-ready" product:

1. Less Capital Invested. Applying the "rule-of-thumb" that $1/month of cash flow amortizes $50 invested, the lower-cost box would allow the operator to pass along savings of about $1/month to the subscriber.

2. Less "Churn." The improved compatibility would tend to keep the current subscriber happier and connected, and would tend to

attract new subscribers. As cable systems are valued today, each subscriber is a $1500-$2900 equity consideration, .

3. Higher Revenue per Subscriber. Greater ease of use may stimulate increased Premium and Pay-Per-View revenues.

If the discount were, for example, $2-$3 per month, the subscriber could envision getting a "payback" of the premium paid for the "cable-ready" TV or VCR in 12-18 months, thus making the selling of the higher-priced product much easier.

## CONCLUSION

We appreciate the opportunity to present these views and to propose potential solutions which we hope will make the task of the Commission — and of all those participating — less burdensome. We will

Accordingly, a necessary element of the solution proposed here would be regulations requiring cable operators to give the purchasers of such equipment a reduction on monthly cable rates in order to show those owners a "payback" on their additional investment. As we have indicated above, it should not be difficult for the cable operators to show a financial justification for doing so.

Respectfully submitted,

Jerry K. Pearlman
President
Zenith Electronics Corporation